Crop tolerance to herbicides.

D. Bowran

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Experimental Summary

1990

David Bowran
Research Officer

Neil Thomson
Technical Assistant

Weed Science
INDEX

1. Tolerance of New Cereal Varieties to Current Herbicides EX 5506
   Trial Nos: 90AL41, 90EC36, 90EB45, 90KA130, 90M85, 90NA100

2. Tolerance of Current Cereal Varieties to New Herbicides EX 5506
   Trial Nos: 90M86, 90EC35, 90N74

3. Metribuzin Tolerance of Cereal Varieties EX 5507
   Trial Nos: 90EC37

4. Lupin Tolerance to Herbicides EX 5508
   Trial Nos: 90EC34, 90EB44

5. Pea Tolerance to Herbicides EX 5509
   Trial Nos: 90KA131, 89KA64

6. Pasture Legume Tolerance to Herbicides EX 64522
   Trial Nos: 90KA132,

Notes on Analysis: All experiments except 90NA100 are laid out as strip plots. Analysis is by SAFE (Spatial Analysis of Field Experiments). Significant reductions in yield at the 95% level of confidence is shown by one asterisk.
TRIAL TITLE: BARLEY TOLERANCE TO HERBICIDES.

TRIAL NUMBER: 90AL41


LOCATION: J Hurst. Property
Jerramungup

CROP(S): Barley
DATE SOWN: 1/6/90

SOIL TYPE: Sandy Loam
FERTILIZER: 100 kg/ha Agras No1.

GROUND PREPARATION: -

EXPERIMENTAL DESIGN: Strip Plot.

PLOT SIZE: 3.0m x 10.0m

HARVESTING SIZE: 1.3m x 9.0m

SPRAYING DETAILS:

SPRAYING DATE: 1/6/90  26/6/90  11/7/90  15/8/90

CROP STAGE: IBS/IAS  Z12.5  Z14  Z16

NOZZLE TYPE: 80015LP  80015LP  8001LP  8001LP

VOLUME (L/Ha): 71  71  37  49

PRESSURE (KPa): 150  150  130  200

TEMPERATURES (°C)

(a) wet/dry 10°C/13°C  10°C/14°C  12°C/15°C  12°C/13°C

(b) previous 24hrs
(min/max) - - - -

(c) next 24hrs
(min/max) - - - -

RAINFALL (mm):

(a) previous 24hrs - - - -

(b) next 24hrs - - - -

TOTALS:

MAY -  JUNE -  JULY -  AUG -  SEPT -  OCT -

WEEDS: nil

COMMENTS: With the exception of Glean on Onslow, all varieties tolerated the herbicides applied in 1990 at this site. The herbicide treatments containing diuron were well tolerated, even in mixture with other grass herbicides. The potential for broad-spectrum mixtures of herbicides for use in barley on the South Coast is supported by these results.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Timing</th>
<th>Ulanda</th>
<th>Stirling</th>
<th>Windich</th>
<th>Moondyne</th>
<th>Onslow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Yield t/ha</td>
<td>3.40</td>
<td>2.85</td>
<td>3.15</td>
<td>3.18</td>
<td>3.82</td>
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<tr>
<td>Stomp</td>
<td>1.5 L</td>
<td>IBS</td>
<td>108</td>
<td>105</td>
<td>111</td>
<td>106</td>
</tr>
<tr>
<td>Diuron</td>
<td>1.5 L</td>
<td>IBS</td>
<td>103</td>
<td>103</td>
<td>101</td>
<td>117</td>
</tr>
<tr>
<td>Stomp + Diuron</td>
<td>1.0 L + 1.0 L</td>
<td>IBS</td>
<td>118</td>
<td>101</td>
<td>104</td>
<td>115</td>
</tr>
<tr>
<td>Lexone + Diuron</td>
<td>133 g + 1.0 L</td>
<td>IBS</td>
<td>102</td>
<td>103</td>
<td>107</td>
<td>111</td>
</tr>
<tr>
<td>Dual + Diuron</td>
<td>1.0 L + 1.0 L</td>
<td>PPPE</td>
<td>108</td>
<td>100</td>
<td>108</td>
<td>120</td>
</tr>
<tr>
<td>Stomp + Diuron</td>
<td>1.0 L + 1.0 L</td>
<td>PPPE</td>
<td>109</td>
<td>104</td>
<td>112</td>
<td>109</td>
</tr>
<tr>
<td>Lexone + Diuron</td>
<td>133 g + 1.0 L</td>
<td>PPPE</td>
<td>112</td>
<td>108</td>
<td>104</td>
<td>107</td>
</tr>
<tr>
<td>Lontrel</td>
<td>600 mL</td>
<td>Z13</td>
<td>108</td>
<td>100</td>
<td>105</td>
<td>114</td>
</tr>
<tr>
<td>Glean + wa</td>
<td>20 g</td>
<td>Z13</td>
<td>107</td>
<td>98</td>
<td>101</td>
<td>98</td>
</tr>
<tr>
<td>Diuron + 2,4-D amine</td>
<td>600 ml + 300 mL</td>
<td>Z15-21</td>
<td>104</td>
<td>98</td>
<td>103</td>
<td>105</td>
</tr>
<tr>
<td>Hoegrass + wa</td>
<td>1.5 L</td>
<td>Z13</td>
<td>108</td>
<td>93</td>
<td>101</td>
<td>113</td>
</tr>
<tr>
<td>Hoe + Brom + Brod + wa</td>
<td>1.0 L + 1.0 L + 75 mL</td>
<td>Z13</td>
<td>106</td>
<td>105</td>
<td>103</td>
<td>107</td>
</tr>
<tr>
<td>Barrel</td>
<td>1.0 L</td>
<td>Z13</td>
<td>101</td>
<td>91</td>
<td>91</td>
<td>98</td>
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<tr>
<td>Ally + wa</td>
<td>10 g</td>
<td>Z13</td>
<td>109</td>
<td>92</td>
<td>107</td>
<td>103</td>
</tr>
<tr>
<td>Grasp + wa</td>
<td>1.5 L</td>
<td>Z14-21</td>
<td>106</td>
<td>98</td>
<td>102</td>
<td>104</td>
</tr>
<tr>
<td>Diuron + MCPA</td>
<td>350 ml + 400 mL</td>
<td>Z14</td>
<td>105</td>
<td>106</td>
<td>97</td>
<td>109</td>
</tr>
<tr>
<td>Igran</td>
<td>850 mL</td>
<td>Z14</td>
<td>105</td>
<td>100</td>
<td>97</td>
<td>107</td>
</tr>
<tr>
<td>Tigrex</td>
<td>2.0 L</td>
<td>Z14</td>
<td>98</td>
<td>97</td>
<td>97</td>
<td>115</td>
</tr>
<tr>
<td>2,4-D amine + wa</td>
<td>1.0 L</td>
<td>Z15-17</td>
<td>112</td>
<td>98</td>
<td>94</td>
<td>102</td>
</tr>
</tbody>
</table>
TRIAL TITLE: NEW CEREAL VARIETY TOLERANCE TO HERBICIDES.

TRIAL NUMBER: 90EC36

OFFICERS: D. Bowran N. Thomson

LOCATION: East Chapman Res. annex

CO-OPERATOR: N. Thomson

SEEDING RATE: 50kg/ha

CROP(S): Wheat, barley, triticale, oats.

DATE SOWN: 12/6/90

SOIL TYPE: Eradu yellow sand.

FERTILIZER: Agras Nol 50kgs/ha

GROUND PREPARATION: Glyphosate 1.0L/ha with 2 applications one 3 weeks prior to seeding and another 2 days prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot

PLOT SIZE: 3.0m x 10.0m

HARVESTING SIZE: 1.6m x 9.0m

SPRAYING DETAILS:

SPRAYING DATE: 29/5/90 12/6/90 18/7/90 7/8/90 6/9/90

CROP STAGE: 2WEEKS.BS IBS 213 217/24 240+

NOZZLE TYPE: 110015LP 110015LP 110015LP 110015LP 8003LP

VOLUME (L/Ha): 65 63 62 67 108

PRESSURE (KPa): 160 160 170 170 160

TEMPERATURES (°C)

(a) wet/dry 15°C/18°C 13°C/15°C 12°C/14°C 12°C/15°C 16°C/25°C

(b) previous 24h (min/max) 12°C/18°C 10°C/18°C 9°C/16°C 8°C/15°C 7°C/29°C

(c) next 24hrs (min/max) 10°C/17°C 10°C/18°C 9°C/17°C 6°C/17°C 13°C/30°C

RAINFALL (mm):

(a) previous 24h 3.2 0.2 0.6 0.8 0.0

(b) next 24h 0.2 0.0 0.0 0.2 0.2

TOTALS:

MAY 32.0 JUNE 50.4 JULY 56.4 AUG 43.0 SEPT 16.6 OCT 32.2

WEEDS: minor: Brome grass

COMMENTS:

Most varieties tolerated the rates of herbicide used, with only 911 showing significant reductions in yield with Glean (20 and 40 g), Treflan and diuron + MCPA (at double rates). Yagan and 10/348 were very susceptible to pre-emergent Logran, and their tolerance to Glean at all rates was low. Ally applied 10 days before seeding was safe on all wheat varieties.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield t/ha</th>
<th>Timing</th>
<th>Reeves</th>
<th>Blade</th>
<th>781</th>
<th>793</th>
<th>Kulin</th>
<th>911</th>
<th>Yagan</th>
<th>10348</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td>1.62</td>
<td>1.29</td>
<td>1.48</td>
<td>1.77</td>
<td>1.53</td>
<td>1.45</td>
<td>1.45</td>
<td>0.74</td>
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<tr>
<td>Glean 12.5 g IBS/Z13</td>
<td></td>
<td></td>
<td>1.00</td>
<td>0.98</td>
<td>1.08</td>
<td>0.96</td>
<td>1.03</td>
<td>0.93</td>
<td>0.90</td>
<td>0.86</td>
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<tr>
<td>Glean 20 g IBS/Z13</td>
<td></td>
<td></td>
<td>0.93</td>
<td>1.04</td>
<td>0.99</td>
<td>0.85</td>
<td>0.84</td>
<td>0.87</td>
<td>0.87</td>
<td>0.58</td>
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<tr>
<td>Glean 40 g IBS/Z13</td>
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<td></td>
<td>0.82</td>
<td>0.83</td>
<td>0.90</td>
<td>0.84</td>
<td>0.87</td>
<td>0.85</td>
<td>0.81</td>
<td>0.60</td>
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<td>Logran 35 g IBS</td>
<td></td>
<td></td>
<td>0.96</td>
<td>1.02</td>
<td>1.05</td>
<td>0.95</td>
<td>1.04</td>
<td>1.03</td>
<td>0.64</td>
<td>0.70</td>
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<tr>
<td>Logran 70 g IBS</td>
<td></td>
<td></td>
<td>1.04</td>
<td>1.08</td>
<td>1.09</td>
<td>0.98</td>
<td>0.99</td>
<td>0.86</td>
<td>0.62</td>
<td>0.57</td>
</tr>
<tr>
<td>Stomp Plus 1.0 L IBS</td>
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<td></td>
<td>0.92</td>
<td>1.08</td>
<td>1.09</td>
<td>1.01</td>
<td>1.01</td>
<td>0.91</td>
<td>0.94</td>
<td>0.52</td>
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<tr>
<td>Treflan 1.0 L IBS</td>
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<td></td>
<td>0.93</td>
<td>0.97</td>
<td>1.01</td>
<td>0.88</td>
<td>0.83</td>
<td>0.81</td>
<td>0.62</td>
<td>0.86</td>
</tr>
<tr>
<td>Ally 5 g 10 days BS</td>
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<td></td>
<td>0.98</td>
<td>1.03</td>
<td>1.01</td>
<td>0.98</td>
<td>0.95</td>
<td>0.89</td>
<td>0.83</td>
<td>0.60</td>
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<tr>
<td>Hoegrass + wa 1.0 L Z12-13</td>
<td></td>
<td></td>
<td>0.93</td>
<td>0.93</td>
<td>1.11</td>
<td>1.06</td>
<td>1.04</td>
<td>0.93</td>
<td>0.98</td>
<td>0.52</td>
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<tr>
<td>Hoegrass + wa 2.0 L Z12-13</td>
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<td></td>
<td>0.92</td>
<td>0.99</td>
<td>0.96</td>
<td>1.00</td>
<td>1.12</td>
<td>0.92</td>
<td>0.99</td>
<td>0.82</td>
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<tr>
<td>Hoegrass + Glean + Oil 750 g + 5 g + 1%</td>
<td></td>
<td></td>
<td>1.00</td>
<td>1.11</td>
<td>1.26</td>
<td>1.01</td>
<td>1.00</td>
<td>0.99</td>
<td>1.06</td>
<td>1.01</td>
</tr>
<tr>
<td>Ally + wa 5 g Z13-14</td>
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<td></td>
<td>0.89</td>
<td>0.97</td>
<td>0.98</td>
<td>0.85</td>
<td>0.87</td>
<td>0.91</td>
<td>0.90</td>
<td>0.59</td>
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<tr>
<td>Tigrex 500 mL Z13-14</td>
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<td>1.03</td>
<td>0.95</td>
<td>1.10</td>
<td>1.04</td>
<td>1.02</td>
<td>0.93</td>
<td>0.90</td>
<td>0.69</td>
</tr>
<tr>
<td>Brominil M 1.0 L Z13-14</td>
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<td>0.97</td>
<td>1.04</td>
<td>1.09</td>
<td>0.98</td>
<td>1.02</td>
<td>1.00</td>
<td>0.96</td>
<td>0.52</td>
</tr>
<tr>
<td>Diuron + MCPA 750 mL + 400 mL Z13-14</td>
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<td></td>
<td>0.94</td>
<td>1.07</td>
<td>1.02</td>
<td>0.88</td>
<td>0.88</td>
<td>0.89</td>
<td>0.91</td>
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<tr>
<td>Diuron + MCPA 1.0 L 700 mL + 800 mL Z13-14</td>
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<td>0.86</td>
<td>0.98</td>
<td>0.95</td>
<td>0.88</td>
<td>0.88</td>
<td>0.80</td>
<td>0.78</td>
<td>0.95</td>
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<tr>
<td>Puma 1.5 L Z13-14</td>
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<td></td>
<td>0.95</td>
<td>1.03</td>
<td>1.01</td>
<td>0.97</td>
<td>0.99</td>
<td>1.00</td>
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<td>0.27</td>
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<tr>
<td>2,4-D ester 650 mL Z15-17</td>
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<td>0.90</td>
<td>1.08</td>
<td>0.99</td>
<td>0.83</td>
<td>0.90</td>
<td>0.97</td>
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<td>2,4-D ester 650 mL Z30</td>
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<td>0.91</td>
<td>1.00</td>
<td>0.96</td>
<td>0.80</td>
<td>0.87</td>
<td>0.98</td>
<td>0.73</td>
</tr>
</tbody>
</table>
TRIAL TITLE: NEW CEREAL VARIETY TOLERANCE TO HERBICIDES.

TRIAL NUMBER: 90EB45

OFFICERS: D. Bowran, N. Thomson.
LOCATION: East Beverly Res. annex
CO-OPERATOR: SEEDING RATE: 40kg/ha
CROP(S): Wheat, barley, oats (various)
DATE SOWN: 1/6/89
SOIL TYPE: Sandy Loam
GROUNDP REPARATION: 1.0L Glyphosate 2 weeks prior to seeding and 1.0L Glyphosate just prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot.
PLotted SIZE: 3.0m x 10.0m
HARVESTING SIZE: 1.6m x 9.0m

SPRAYING DETAILS:

SPRAYING DATE: 1/6 2/7 4/7 27/7 13/8 30/8
CROP STAGE: IBS/IAS Z12.5 Z13 Z14.5 Z16 Z32
NOZZLE TYPE: 800112 110015LP 11001512 110015LP 800212 110015LP
VOLUME (L/Ha): 45 60 65 62 90 60
PRESSURE (KPa): 160 160 165 160 150 160

TEMPERATURES (°C):
(a) wet/dry 13C/20C 12°C/14°C 11°C/15°C 9°C/12°C 10°C/13°C 13°C/14°C
(b) previous 24hr 3°C/17°C 0°C/12°C 0°C/14°C - - 6°C/16°C
(c) next 24hrs 2°C/20°C 1°C/16°C 3°C/16°C - 8°C/14°C 6°C/16°C

RAINFALL (mm):
(a) previous 24h 0.0 0.0 0.0 0.0 0.5 1.0
(b) next 24hrs 0.0 0.0 0.0 0.0 0.0 0.0

TOTALS:
MAY 65.9 JUNE 36.7 JULY 67.0 AUG 32.7 SEPT 18.6 OCT 27.0

WEEDS:
Wild Oats
Annual Ryegrass
Wild radish

COMMENTS:

This site was infested with quite high populations of weeds and is more realistically an efficacy site. Annual rye-grass and wild radish were the most common, with a few small patches of wild oats. Weeds were least in Reeves and Corrigin, and greatest in Kulin. While Glean at all rates gave adequate control of all weeds, yields in all varieties were well below those of Logran, which were below those obtained with a Hooegrass + Bromoxynil + Brodal mixture in most cases. Comparison of tolerance levels between treatments is not possible given the presence of weeds.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield t/ha</th>
<th>Timing</th>
<th>Reeves</th>
<th>Corigin</th>
<th>Dagger</th>
<th>781</th>
<th>793</th>
<th>Kulin</th>
<th>10 349</th>
<th>Windich</th>
<th>Mortlock</th>
<th>336</th>
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</thead>
<tbody>
<tr>
<td>Control</td>
<td>2.47</td>
<td>2.43</td>
<td>1.87</td>
<td>1.94</td>
<td>2.24</td>
<td>1.67</td>
<td>0.77</td>
<td>2.38</td>
<td>1.95</td>
<td>2.55</td>
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<tr>
<td>Glean 12.5 g IBS-Z13</td>
<td>102</td>
<td>100</td>
<td>128</td>
<td>121</td>
<td>110</td>
<td>132</td>
<td>123</td>
<td>90</td>
<td>89</td>
<td>99</td>
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<tr>
<td>Glean 20 g IBS-Z13</td>
<td>88</td>
<td>81*</td>
<td>108</td>
<td>97</td>
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<td>84</td>
<td>83</td>
<td>91</td>
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<td>91</td>
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</tr>
<tr>
<td>Glean 40 g IBS-Z13</td>
<td>88*</td>
<td>80*</td>
<td>110</td>
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<td>89</td>
<td>87</td>
<td>82</td>
<td>70</td>
<td>76*</td>
<td>86</td>
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<tr>
<td>Logran 35 g IBS</td>
<td>115</td>
<td>113</td>
<td>138</td>
<td>124</td>
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<td>136</td>
<td>92</td>
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<td>97</td>
<td>97</td>
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<tr>
<td>Logran 70 g IBS</td>
<td>108</td>
<td>114</td>
<td>130</td>
<td>127</td>
<td>115</td>
<td>138</td>
<td>123</td>
<td>100</td>
<td>91</td>
<td>94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stomp 1.8 L IBS</td>
<td>112</td>
<td>121</td>
<td>112</td>
<td>114</td>
<td>108</td>
<td>120</td>
<td>134</td>
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<td>99</td>
<td>97</td>
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<td></td>
</tr>
<tr>
<td>Avadex 2.0 L IBS</td>
<td>112</td>
<td>133</td>
<td>125</td>
<td>123</td>
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<td>112</td>
<td>96</td>
<td>100</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ally 5 g 10 days BS</td>
<td>94</td>
<td>99</td>
<td>128</td>
<td>118</td>
<td>125</td>
<td>151</td>
<td>160</td>
<td>110</td>
<td>100</td>
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<tr>
<td>Hoegrass 1.5 L Z13</td>
<td>113</td>
<td>113</td>
<td>127</td>
<td>121</td>
<td>112</td>
<td>144</td>
<td>69</td>
<td>97</td>
<td>76*</td>
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<tr>
<td>Hoegrass 3.0 L Z13</td>
<td>109</td>
<td>108</td>
<td>126</td>
<td>123</td>
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<td>148</td>
<td>26*</td>
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<td>76*</td>
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<tr>
<td>Hoe + Glean 750 mL + 5 g</td>
<td>109</td>
<td>108</td>
<td>125</td>
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<td>116</td>
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<tr>
<td>Ally + wa 5 g Z13</td>
<td>100</td>
<td>97</td>
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<td>Hoe + Brom + Brod + wa 750 mL + 1.0 L + 50 mL</td>
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<td>140</td>
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<tr>
<td>Buctril MA 1.0 L Z13</td>
<td>97</td>
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<td>124</td>
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<td>Diuron + MCPA 350 mL + 400 mL</td>
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<td>130</td>
<td>129</td>
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<td>Tigrex 500 mL Z13</td>
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<td>Grasp + wa 1.5 L Z14-21</td>
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<td>106</td>
<td>67*</td>
<td>73</td>
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</table>
TRIAL TITLE: NEW CEREAL VARIETY TOLERANCE TO HERBICIDES

TRIAL NUMBER: 90KA130

OFFICERS: D Bowran, N Thomson

CO-OPERATOR: SEEDING RATE: 50kg/ha
CROP(S): Wheat, Barley, & Oats DATE SOWN: 25/6/90
SOIL TYPE: Sandy Gravel over clay FERTILIZER: 100kg/ha Agra Nol.
GROUND PREPARATION: Cultivated, 1.0L Roundup pre seeding
EXPERIMENTAL DESIGN: Strip Plot
PLOT SIZE: 3.0m x 9.0m
HARVESTING SIZE: 1.6m x 9.0m

SPRAYING DETAILS:

SPRAYING DATE: 25/6/90 31/7/90 14/8/909 12/9/90 20/9/90
CROP STAGE: IBS/IAS Z12-13 Z13-14 Z17 Z32
NOZZLE TYPE: 110015LP 110015LP 8002LP 8001LP 110015LP
VOLUME (L/Ha): 60 60 96 45 70
PRESSURE (KPa): 160 160 150 170 165

TEMPERATURES (°C)

(a) wet/dry 9°C/11°C 11°C/15°C 12°C/14°C 11°C/15°C
(b) previous 24h - - - -
(min/max) - - - -
(c) next 24hrs - - - -
(min/max) - - - -

RAINFALL (mm):

(a) previous 24h 0.0 0.0 0.5 0.0 2.5
(b) next 24hrs 0.0 0.0 0.0 0.0 0.0

TOTALS:

MAY-30.0 JUNE-28.0 JULY-92.0 AUG-36.0 SEPT-39.0 OCT-27.5

WEEDS: Minor: Ryegrass

COMMENTS:

Yield reductions were generally greater at this site, with Reeves, 884 and 895 having the highest tendency for reduced yield. Reeves appeared more sensitive to Glean, Logran, Ally, Barrel and 2,4-D, while 884 was most sensitive to phenoxy herbicides. In contrast to other sites 781 appeared more Glean sensitive, while 793 was more Glean tolerant. Both oat varieties were generally tolerant to the herbicides which are recommended for this crop. The phenoxy sensitivity of 884 requires investigation given its parentage of phenoxy sensitive lines.
## Trial no. 90KA130

<table>
<thead>
<tr>
<th>Timing</th>
<th>Reeves</th>
<th>Corargin</th>
<th>781</th>
<th>793</th>
<th>884</th>
<th>895</th>
<th>911</th>
<th>336</th>
<th>348</th>
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<tr>
<td>Control</td>
<td>Yield t/ha</td>
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<td>1.84</td>
<td>2.05</td>
<td>1.71</td>
<td>1.95</td>
<td>2.08</td>
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<tr>
<td>Glean 12.5 g</td>
<td>IBS/Z13</td>
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<td>99</td>
<td>95</td>
<td>95</td>
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<td>88*</td>
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<td>78*</td>
<td>80</td>
<td>91</td>
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<tr>
<td>Logran 35 g</td>
<td>IBS</td>
<td>93</td>
<td>105</td>
<td>102</td>
<td>106</td>
<td>85</td>
<td>78</td>
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<td>82*</td>
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<tr>
<td>Logran 70 g</td>
<td>IBS</td>
<td>85*</td>
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<td>96</td>
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<td>84</td>
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<td>70*</td>
</tr>
<tr>
<td>Stomp Plus</td>
<td>1.0 L</td>
<td>IBS</td>
<td>80*</td>
<td>87*</td>
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<tr>
<td>Treflan 1.0 L</td>
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<tr>
<td>Hoe + Buct + Brod + wa 1.0 L + 1.0 L + 75 mL</td>
<td>Z12-13</td>
<td>82*</td>
<td>98</td>
<td>94</td>
<td>112</td>
<td>90</td>
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<tr>
<td>Hoegrass + wa 1.0 L</td>
<td>Z12-13</td>
<td>95</td>
<td>107</td>
<td>89</td>
<td>97</td>
<td>109</td>
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<td>95</td>
</tr>
<tr>
<td>Hoegrass + wa 2.0 L</td>
<td>Z12-13</td>
<td>93</td>
<td>107</td>
<td>103</td>
<td>112</td>
<td>89</td>
<td>93</td>
<td>111</td>
<td>77*</td>
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<tr>
<td>Hoegrass + Glean + Oil 750 g + 5 g + 1%</td>
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<td>106</td>
<td>107</td>
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<td>113</td>
<td>95</td>
<td>95</td>
<td>98</td>
<td>105</td>
</tr>
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<td>Ally + wa 5 g</td>
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<td>90</td>
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<td>85</td>
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<td>Tigrex 500 mL</td>
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<td>92</td>
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<td>77*</td>
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<td>96</td>
<td>96</td>
<td>102</td>
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<td>95</td>
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<td>Diuron + MCPA 350 mL + 400 mL</td>
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<td>94</td>
<td>85</td>
<td>94</td>
<td>70*</td>
<td>86</td>
<td>94</td>
<td>101</td>
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<tr>
<td>Diuron + MCPA 700 mL + 800 mL</td>
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<td>98</td>
<td>88</td>
<td>89</td>
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<td>Puma 1.5 L</td>
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<td>92</td>
<td>95</td>
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<td>52*</td>
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<td>2,4-D amine  1.0 L</td>
<td>Z15-17</td>
<td>87*</td>
<td>97</td>
<td>92</td>
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<td>62*</td>
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</table>
TRIAL TITLE: NEW CEREAL VARIETY TOLERANCE TO HERBICIDES.

TRIAL NUMBER: 90M85

CO-OPERATOR: SEEDING RATE: 50kg/ha
CROP(S): Wheat, Barley & Oats DATE SOWN: 20/6/90
SOIL TYPE: Clay Loam FERTILIZER: Agras 100kg/ha
GROUND PREPARATION: Sprayed 1.0L/ha Glyphosate prior to seeding.
EXPERIMENTAL DESIGN: Strip Plot
PLOT SIZE: 7.0m x 3.0m
HARVESTING SIZE: 7.0m x 1.5m

SPRAYING DETAILS:

SPRAYING DATE: 27/7/90 30/8/90
CROP STAGE: Z12-3 Z15+
NOZZLE TYPE: 110015LP 110015LP
VOLUME (L/Ha): 60 62
PRESSURE (KPa): 150 160

TEMPERATURES (°C)

(a) wet/dry 10°C/13°C 12°C/17°C
(b) previous 24h (min/max) 1°C/13°C 8°C/15°C
(c) next 24hrs (min/max) 0°C/14°C 3°C/18°C

RAINFALL (mm):

(a) previous 24h 0.2 0.0
(b) next 24hrs 0.0 0.0

TOTALS (mm):

MAY 7.0 JUNE 35.4 JULY 47.8 AUG 22.7 SEPT 26.6 OCT 26.3

WEEDS:

Major: Wild Oats
Minor: Ryegrass.

COMMENTS:

Although some weeds were present at this site, no yield increases could be attributed to herbicide use. While most varieties were tolerant to the herbicides tested, Dagger appeared to be sensitive to both Glean and Ally, Hoegrass, Avadex and to Logran at the highest rate.
### Trial no. 90M85

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Timing</th>
<th>Reeves</th>
<th>Corrigin</th>
<th>Wilgoyne</th>
<th>Dagger</th>
<th>781</th>
<th>793</th>
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<td>101</td>
<td>108</td>
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<td>84*</td>
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<td>74*</td>
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<tr>
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<td>IBS</td>
<td>108</td>
<td>100</td>
<td>96</td>
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<td>Logran</td>
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<td>Stomp</td>
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<td>108</td>
<td>101</td>
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<td>106</td>
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<td>Hoegrass + wa</td>
<td>2.0 L</td>
<td>Z12-13</td>
<td>103</td>
<td>101</td>
<td>95</td>
<td>74*</td>
<td>94</td>
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<tr>
<td>Hoe + Glean + Oil</td>
<td>750 mL + 5 g</td>
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<td>104</td>
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<td>101</td>
<td>88</td>
<td>96</td>
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<tr>
<td>Ally + wa</td>
<td>5 g</td>
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<td>101</td>
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<td>57*</td>
<td>84</td>
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<td>Tigrex</td>
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<td>Buctril MA</td>
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<td>92</td>
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<tr>
<td>Diuron + MCPA lve</td>
<td>350 mL + 400 mL</td>
<td>Z13</td>
<td>85</td>
<td>97</td>
<td>93</td>
<td>73*</td>
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<tr>
<td>Grasp + wa</td>
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<td>115</td>
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<td>2,4-D ester</td>
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TRIAL TITLE: TOLERANCE OF CORRIGIN AND TINCURRIN WHEAT TO POST EMERGENT HERBICIDES FOR GRASS WEED CONTROL.

TRIAL NUMBER: 90NA100

OFFICERS: D. Bowran, N. Thomson

CO-OPERATOR: R. Parsons

CROP(S): Wheat

SOIL TYPE: Sandy loam over clay

GROUND PREPARATION:

EXPERIMENTAL DESIGN: Strip Plot

PLOT SIZE: 3.0mx10.0m

HARVESTING SIZE: 1.5mx10.0m

LOCATION: Pingelly

DATE SOWN: early June

FERTILIZER: unknown

SPRAYING DETAILS:

SPRAYING DATE:

CROP STAGE: Z12-13

NOZZLE TYPE: 8001LP

VOLUME (L/Ha): 48

PRESSURE (KPa): 150

TEMPERATURES (°C)

(a) wet/dry

(b) previous 24h

(min/max)

(c) next 24hrs

(min/max)

RAINFALL (mm):

(a) previous 24h

(b) next 24hrs

TOTALS:

MAY JUNE JULY AUG SEPT OCT

WEEDS: Some Annual Ryegrass

COMMENTS

When selected, this site appeared to have very few annual rye-grass. However, based on the results, these plants were quite competitive. Most herbicide treatments increased yield in both varieties, but these increases were generally not significant.
## Trial no. 90NA100

<table>
<thead>
<tr>
<th>Product</th>
<th>Yield t/ha</th>
<th>Timing</th>
<th>Corigin</th>
<th>Tincurrin</th>
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<td>Control</td>
<td></td>
<td></td>
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<td>2.20</td>
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<td>Glean</td>
<td>25 g</td>
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<td>Logran</td>
<td>35 g</td>
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<tr>
<td>Ally</td>
<td>5 g</td>
<td>Z13</td>
<td>97</td>
<td>120</td>
</tr>
<tr>
<td>Hoegrass</td>
<td>1.5 L</td>
<td>Z13</td>
<td>117</td>
<td>116</td>
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<tr>
<td>Grasp</td>
<td>1.0 L</td>
<td>Z13</td>
<td>119</td>
<td>121</td>
</tr>
<tr>
<td>Puma</td>
<td>1.5 L</td>
<td>Z13</td>
<td>119</td>
<td>114</td>
</tr>
<tr>
<td>Hoegrass + Glean + Oil</td>
<td>750 ml + 5 g</td>
<td>Z13</td>
<td>134</td>
<td>117</td>
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</tbody>
</table>
TRIAL TITLE: TOLERANCE OF CURRENT VARIETIES TO NEW HERBICIDES OR HERBICIDE MIXTURES

TRIAL NUMBER: 90M86

OFFICERS: D. Bowran, N. Thomson

LOCATION: Merriden Research Stn.

CO-OPERATOR: SEEDING RATE: 50kg/ha

CROP(S): Cereals (various)

DATE SOWN: 20/6/90

SOIL TYPE: Clay Loam

FERTILIZER: 100 kg/ha Agras No. 1

GROUND PREPARATION: Sprayed 1.0L/ha Glyphosate prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot

PLOT SIZE: 3.0m x 7.0m

HARVESTING SIZE: 1.6m x

SPRAYING DETAILS:

SPRAYING DATE: 19/6/90 20/6/90 27/7/90 13/8/90 21/8/90 11/9/90

CROP STAGE: IBS IPP Z12-13 Z14/21 Z15/21 Z32

NOZZLE TYPE: 110015LP 110015LP 110015LP 8002LP 110015LP 8001LP

VOLUME (L/Ha): 60 60 82 64 50

PRESSURE (KPa): 150 150 175 180

TEMPERATURES (°C)

(a) wet/dry - - 10°C/13°C 10°C/11°C - 12°C/17°C

(b) previous 24h

(min/max) 4°C/15°C 6°C/18°C 1°C/13°C 7°C/16°C 5°C/17°C 0°C/14°C

(c) next 24hrs

(min/max) 6°C/18°C 5°C/17°C 0°C/14°C 8°C/14°C 4°C/15°C 3°C/17°C

RAINFALL (mm):

(a) previous 24h 0.0 0.0 1.4 0.0 0.0 0.0

(b) next 24hrs 0.0 0.2 0.2 0.0 0.0

TOTALS:

MAY-7.0 JUNE-35.4 JULY-47.8 AUG-22.7 SEPT-26.6 OCT-26.3

WEEDS: Minor: Wild Oats, Ryegrass

COMMENTS:

Ryegrass and wild oats were present at higher density in this trial, and some yield increases were obtained with the Hoegrass treatments. All Hoegrass mixtures were generally equal in yield although effects on varieties were variable. Ally mixtures were safest with MCPA and least with Brodal and 2,4-D ester. Early timings of 2,4-D amine were more damaging than later timings, and this was rate dependent with 400ml/ha generally safer. Mortlock oats and Kulin wheat were most sensitive to 2,4-D amine at both timings.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield t/ha</th>
<th>Kulin</th>
<th>Spear</th>
<th>Aroona</th>
<th>Eradu</th>
<th>Stirling</th>
<th>Mortlock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>1.19</td>
<td>1.07</td>
<td>1.04</td>
<td>1.07</td>
<td>1.50</td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td>Diuron + Logran</td>
<td>1.0 L + 30 g</td>
<td>IAS</td>
<td>96</td>
<td>132</td>
<td>142</td>
<td>94</td>
<td>93</td>
</tr>
<tr>
<td>Hoe + Glean + Oil</td>
<td>1.0 L + 5 g</td>
<td>Z12-13</td>
<td>108</td>
<td>103</td>
<td>135</td>
<td>116</td>
<td>120</td>
</tr>
<tr>
<td>Hoe + Brodal + Oil</td>
<td>1.0 L + 50 mL</td>
<td>Z12-13</td>
<td>88</td>
<td>102</td>
<td>128</td>
<td>129</td>
<td>114</td>
</tr>
<tr>
<td>Hoe + Buct + Brod</td>
<td>1.0 L + 1.0 L + 75 mL</td>
<td>Z12-13</td>
<td>112</td>
<td>119</td>
<td>138</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Ally + MCPA amine</td>
<td>5 g + 1.5 L</td>
<td>Z21</td>
<td>103</td>
<td>128</td>
<td>135</td>
<td>107</td>
<td>116</td>
</tr>
<tr>
<td>Ally + Brodal</td>
<td>5 g + 100 mL</td>
<td>Z21</td>
<td>102</td>
<td>94</td>
<td>102</td>
<td>86</td>
<td>105</td>
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<td>Ally + MCPA amine</td>
<td>5 g + 1.5 L</td>
<td>Z30</td>
<td>113</td>
<td>124</td>
<td>120</td>
<td>89</td>
<td>105</td>
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<tr>
<td>Ally + 2,4-D ester</td>
<td>5 g + 0.5 L</td>
<td>Z31</td>
<td>61*</td>
<td>92</td>
<td>79</td>
<td>48*</td>
<td>54*</td>
</tr>
<tr>
<td>2,4-D amine</td>
<td>400 mL</td>
<td>Z12-13</td>
<td>102</td>
<td>100</td>
<td>103</td>
<td>87</td>
<td>92</td>
</tr>
<tr>
<td>2,4-D amine</td>
<td>800 mL</td>
<td>Z12-13</td>
<td>73</td>
<td>82</td>
<td>84</td>
<td>73*</td>
<td>83*</td>
</tr>
<tr>
<td>2,4-D amine</td>
<td>1.6 L</td>
<td>Z12-13</td>
<td>79</td>
<td>71*</td>
<td>66*</td>
<td>69*</td>
<td>66*</td>
</tr>
<tr>
<td>2,4-D amine</td>
<td>400 mL</td>
<td>Z15</td>
<td>69</td>
<td>109</td>
<td>121</td>
<td>109</td>
<td>113</td>
</tr>
<tr>
<td>2,4-D amine</td>
<td>800 mL</td>
<td>Z15</td>
<td>82</td>
<td>113</td>
<td>104</td>
<td>88</td>
<td>89</td>
</tr>
<tr>
<td>2,4-D amine</td>
<td>1.6 L</td>
<td>Z15</td>
<td>77</td>
<td>104</td>
<td>91</td>
<td>105</td>
<td>116</td>
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</tbody>
</table>
TRIAL TITLE: TOLERANCE OF CURRENT VARIETIES TO NEW HERBICIDES.

TRIAL NUMBER: 90EC35

OFFICERS: D. Bowran, N. Thomson
LOCATION: East Chapman Res. annex
CO-OPERATOR: SEEDING RATE: 50kg/ha
CROP(S): Wheat, barley, oats (various).
DATE SOWN: 13/6/90
SOIL TYPE: Eradu yellow sand
FERTILIZER: 100kg/ha Agras Nol
GROUND PREPARATION: Glyphosate 3 weeks prior to seeding @ 1.0L/ha
Glyphosate 2 days prior to seeding @ 1.0L/ha

EXPERIMENTAL DESIGN: Strip Plot
PLOT SIZE: 9.0m x 3.0m
HARVESTING SIZE: 8.0m x 1.5m

SPRAYING DETAILS:

SPRAYING DATE:
13/6/90
18/7/90
7/8/90

CROP STAGE:
IBS/IAS
Z13
Z15

NOZZLE TYPE:
110015LP
110015LP
110015LP

VOLUME (L/Ha):
69
65
67

PRESSURE (KPa):
160
160
160

TEMPERATURES (°C)

(a) wet/dry
13°C/15°C
11°C/12°C
12°C/15°C

(b) previous 24h
8°C/17°C
9°C/16°C
6°C/14°C

(c) next 24hrs
14°C/18°C
9°C/17°C
6°C/16°C

RAINFALL (mm):

(a) previous 24h
0.0
0.6
0.8

(b) next 24hrs
11.4
0.2
0.2

TOTALS (mm):

MAY 32.0
JUNE 50.4
JULY 56.4
AUG 43.0
SEPT 16.6
OCT 32.2

WEEDS: Minor: Brome grass

COMMENTS:

Of the herbicide treatments tested diuron + Tigrex at both timings caused severe yield loss on all varieties. Nearly all diuron treatments at 1.0L/ha caused yield loss when applied immediately after seeding (IAS). Tycor was least tolerated at the IAS timing while Lexone and Tycor were tolerated by some varieties at the Z13 timing. Blade and Reeves were most tolerant to metribuzin (Lexone, Sencor 480, Stomp Plus) and etiozin (Tycor). As metribuzin rates increased in Stomp Plus, Stomp Plus MKII and Avadex + Sencor 480, crop tolerance decreased. Spear remained the most sensitive variety to metribuzin. Hoegrass in mixtures with Glean, Brodal and Brominil + Brodal was generally well tolerated by all varieties except the oats.
<table>
<thead>
<tr>
<th>Control</th>
<th>Timing Blade</th>
<th>Spear</th>
<th>Gutha</th>
<th>Kulin</th>
<th>Eradu</th>
<th>Reeves</th>
<th>Stirling</th>
<th>Yagan</th>
<th>Echidna</th>
<th>Wingjardie</th>
<th>Coorong</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Yield t/ha</td>
<td>1.27</td>
<td>1.50</td>
<td>1.62</td>
<td>1.20</td>
<td>1.28</td>
<td>1.43</td>
<td>1.36</td>
<td>2.00</td>
<td>1.35</td>
<td>1.45</td>
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<tr>
<td><strong>Stomp Plus</strong></td>
<td>1.0 L</td>
<td>IBS</td>
<td>87</td>
<td>85</td>
<td>92</td>
<td>105</td>
<td>95</td>
<td>103</td>
<td>94</td>
<td>93</td>
<td>76*</td>
</tr>
<tr>
<td><strong>Stomp Plus</strong></td>
<td>2.0 L</td>
<td>IBS</td>
<td>88</td>
<td>59*</td>
<td>74*</td>
<td>82*</td>
<td>90</td>
<td>91</td>
<td>80*</td>
<td>80*</td>
<td>80*</td>
</tr>
<tr>
<td><strong>Stomp Plus Mk2</strong></td>
<td>1.0 L</td>
<td>IBS</td>
<td>96</td>
<td>89</td>
<td>90</td>
<td>98</td>
<td>95</td>
<td>96</td>
<td>92</td>
<td>85*</td>
<td>98</td>
</tr>
<tr>
<td><strong>Stomp Plus Mk2</strong></td>
<td>2.0 L</td>
<td>IBS</td>
<td>87</td>
<td>63*</td>
<td>81*</td>
<td>91</td>
<td>92</td>
<td>92</td>
<td>88</td>
<td>82*</td>
<td>82*</td>
</tr>
<tr>
<td><strong>Lexone</strong></td>
<td>200 g</td>
<td>Z13</td>
<td>97</td>
<td>72*</td>
<td>80*</td>
<td>80*</td>
<td>89</td>
<td>93</td>
<td>92</td>
<td>88</td>
<td>70*</td>
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<tr>
<td><strong>Tycor</strong></td>
<td>2 kg</td>
<td>IAS</td>
<td>92</td>
<td>4*</td>
<td>78*</td>
<td>75*</td>
<td>68*</td>
<td>71*</td>
<td>62*</td>
<td>62*</td>
<td>9</td>
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<tr>
<td><strong>Tycor</strong></td>
<td>2 kg</td>
<td>Z13</td>
<td>110</td>
<td>72*</td>
<td>90</td>
<td>100</td>
<td>87</td>
<td>98</td>
<td>96</td>
<td>85*</td>
<td>64*</td>
</tr>
<tr>
<td><strong>Avadex + Sencor 480</strong></td>
<td>1.0 L + 208 mL</td>
<td>IBS</td>
<td>103</td>
<td>75*</td>
<td>86*</td>
<td>89</td>
<td>94</td>
<td>104</td>
<td>89</td>
<td>83*</td>
<td>68*</td>
</tr>
<tr>
<td><strong>Avadex + Sencor 480</strong></td>
<td>2.0 L + 417 mL</td>
<td>IBS</td>
<td>88</td>
<td>54*</td>
<td>83*</td>
<td>88</td>
<td>83*</td>
<td>83*</td>
<td>85*</td>
<td>81*</td>
<td>66*</td>
</tr>
<tr>
<td><strong>Diuron + Logran</strong></td>
<td>1.0 L + 30 grm</td>
<td>IAS</td>
<td>88</td>
<td>79*</td>
<td>71*</td>
<td>84*</td>
<td>78*</td>
<td>100</td>
<td>83*</td>
<td>64*</td>
<td>52*</td>
</tr>
<tr>
<td><strong>Diuron + Dual</strong></td>
<td>1.0 L + 1.0 L</td>
<td>IAS</td>
<td>79*</td>
<td>83</td>
<td>78*</td>
<td>89</td>
<td>79*</td>
<td>73*</td>
<td>79*</td>
<td>82*</td>
<td>88</td>
</tr>
<tr>
<td><strong>Diuron + Sencor 480</strong></td>
<td>1.0 L + 208 mL</td>
<td>IAS</td>
<td>87</td>
<td>59*</td>
<td>64*</td>
<td>74*</td>
<td>66*</td>
<td>80*</td>
<td>73*</td>
<td>75*</td>
<td>65*</td>
</tr>
<tr>
<td><strong>Diuron + Stomp + Brod</strong></td>
<td>1.0 L + 1.0 L + 75 mL</td>
<td>IAS</td>
<td>83*</td>
<td>84</td>
<td>73*</td>
<td>70*</td>
<td>76*</td>
<td>93</td>
<td>86*</td>
<td>79*</td>
<td>74*</td>
</tr>
<tr>
<td><strong>Hoe + Glean + Oil</strong></td>
<td>1.0 L + 5 g</td>
<td>Z13</td>
<td>100</td>
<td>96</td>
<td>87*</td>
<td>96</td>
<td>97</td>
<td>99</td>
<td>98</td>
<td>88</td>
<td>47*</td>
</tr>
<tr>
<td><strong>Hoe + Brodal + Oil</strong></td>
<td>1.0 L + 50 mL</td>
<td>Z13</td>
<td>100</td>
<td>96</td>
<td>90</td>
<td>96</td>
<td>93</td>
<td>93</td>
<td>101</td>
<td>93</td>
<td>36*</td>
</tr>
<tr>
<td><strong>Hoe + Buct + Brod + Oil</strong></td>
<td>1.0 L + 1.0 L + 75 mL</td>
<td>Z13</td>
<td>96</td>
<td>104</td>
<td>98</td>
<td>103</td>
<td>109</td>
<td>102</td>
<td>94</td>
<td>94</td>
<td>41*</td>
</tr>
<tr>
<td><strong>Diuron + Tigrex</strong></td>
<td>300 mL + 250 mL</td>
<td>Z13</td>
<td>80*</td>
<td>79*</td>
<td>72*</td>
<td>78*</td>
<td>84*</td>
<td>84*</td>
<td>84*</td>
<td>76*</td>
<td>75*</td>
</tr>
<tr>
<td><strong>Diuron + Tigrex</strong></td>
<td>300 mL + 250 mL</td>
<td>Z15</td>
<td>80*</td>
<td>79*</td>
<td>66*</td>
<td>74*</td>
<td>75</td>
<td>74*</td>
<td>78*</td>
<td>72*</td>
<td>97</td>
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</tbody>
</table>
TRIAL TITLE: TOLERANCE OF CEREAL VARIETIES TO NEW HERBICIDES OR HERBICIDE MIXTURES.

TRIAL NUMBER: 90N74

OFFICERS: D. Bowran  N. Thomson
CROP(S): Wheat, Barley & Oats  SEEDING RATE: 50kg/ha.
SOIL TYPE: Sandy Loam over clay.  FERTILIZER: 100kg/ha Agras No1.
GROUND PREPARATION: Scarified, 1.0L Glyphosate pre seeding
EXPERIMENTAL DESIGN: Strip Plot
PLOT SIZE: 3.0m x 9.0m
HARVESTING SIZE: 1.6m x 9.0m

SPRAYING DETAILS:

<table>
<thead>
<tr>
<th>SPRAYING DATE</th>
<th>29/6/90</th>
<th>9/8/90</th>
<th>11/9/90</th>
<th>21/9/90</th>
<th>4/10/90</th>
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</thead>
<tbody>
<tr>
<td>CROP STAGE:</td>
<td>IBS/IAS</td>
<td>Z13</td>
<td>Z14/21</td>
<td>Z31</td>
<td>Z40+</td>
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<tr>
<td>NOZZLE TYPE:</td>
<td>110015LP</td>
<td>8002LP</td>
<td>110015LP</td>
<td>8001LP</td>
<td>110015LP</td>
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<tr>
<td>VOLUME (L/Ha):</td>
<td>64</td>
<td>85</td>
<td>64</td>
<td>50</td>
<td>64</td>
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<tr>
<td>PRESSURE (KPa):</td>
<td>160</td>
<td>160</td>
<td>175</td>
<td>180</td>
<td>160</td>
</tr>
</tbody>
</table>

TEMPERATURES (°C)

(a) wet/dry - 9°C/11°C 12°C/14°C - 13°C/16°C
(b) previous 24h (min/max) 9°C/13°C -2°C/13°C 1°C/16°C -1°C/15°C 9°C/19°C
(c) next 24hrs (min/max) 2°C/13°C 4°C/14°C 5°C/15°C 3°C/20°C 9°C/16°C

RAINFALL (mm):

(a) previous 24h 0.0 0.0 0.4 0.0 0.0
(b) next 24hrs 4.0 0.4 0.0 0.0 0.0

TOTALS:

MAY 36.8 JUNE 42.4 JULY 12.0 AUG 59.6 SEPT 20.4 OCT 15.6

WEEDS: Major: Annual Ryegrass,
       Minor: Wild Radish.

COMMENTS:

A very large germination of annual rye-grass emerged at this site after seeding. Consequently tolerance comparisons are difficult due to the variable control exerted by many herbicides. Excellent rye-grass control was obtained with all Hoegrass mixtures and treatments. Hoegrass + Grasp mixtures were at least equal to Hoegrass in yield, while Grasp alone showed no crop damage at the rate and timing used. Hoegrass + Buctril + Brodal treatments were the highest yielding plots in most cases, even though phytotoxicity was present immediately after application. Diuron + Lexone, Stomp plus and Igran + diuron all gave acceptable rye-grass control but did cause some crop damage.
<table>
<thead>
<tr>
<th></th>
<th>Timing</th>
<th>Corrin</th>
<th>Tincurrin</th>
<th>Kulin</th>
<th>Spear</th>
<th>Arona</th>
<th>Currency</th>
<th>Stirling</th>
<th>Windich</th>
<th>Mortlock</th>
<th>Echidna</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Yield t/ha</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Glean</strong></td>
<td>20 g</td>
<td>Z14</td>
<td>1.00</td>
<td>0.72</td>
<td>0.62</td>
<td>0.80</td>
<td>0.77</td>
<td>0.88</td>
<td>1.04</td>
<td>1.05</td>
<td>1.34</td>
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<tr>
<td><strong>Diuron + Lexone</strong></td>
<td>1.0 L + 133 g</td>
<td>IPP</td>
<td>116</td>
<td>116</td>
<td>136</td>
<td>131</td>
<td>130</td>
<td>125</td>
<td>118</td>
<td>142</td>
<td>109</td>
</tr>
<tr>
<td><strong>Stomp Plus</strong></td>
<td>1.5 L</td>
<td>IBS</td>
<td>101</td>
<td>113</td>
<td>139</td>
<td>130</td>
<td>133</td>
<td>128</td>
<td>131</td>
<td>116</td>
<td>107</td>
</tr>
<tr>
<td><strong>Igran + Diuron</strong></td>
<td>0.5 L + 1.0 L</td>
<td>IPP</td>
<td>120</td>
<td>133</td>
<td>139</td>
<td>158</td>
<td>138</td>
<td>139</td>
<td>128</td>
<td>133</td>
<td>130</td>
</tr>
<tr>
<td><strong>Ally + Brodal</strong></td>
<td>5 g + 150 mL</td>
<td>Z13</td>
<td>102</td>
<td>117</td>
<td>110</td>
<td>127</td>
<td>93</td>
<td>105</td>
<td>125</td>
<td>115</td>
<td>111</td>
</tr>
<tr>
<td><strong>Hoe + Buct + Brod + wa</strong></td>
<td>1.5 L + 2.0 L + 100 mL</td>
<td>Z13</td>
<td>119</td>
<td>129</td>
<td>160</td>
<td>195</td>
<td>160</td>
<td>158</td>
<td>147</td>
<td>124</td>
<td>55*</td>
</tr>
<tr>
<td><strong>Hoe + Brod + wa</strong></td>
<td>1.5 L + 150 mL</td>
<td>Z13</td>
<td>115</td>
<td>124</td>
<td>160</td>
<td>163</td>
<td>146</td>
<td>141</td>
<td>135</td>
<td>130</td>
<td>94</td>
</tr>
<tr>
<td><strong>Hoe + Glean + oil</strong></td>
<td>750 mL + 5 g</td>
<td>Z13</td>
<td>190</td>
<td>116</td>
<td>138</td>
<td>147</td>
<td>142</td>
<td>128</td>
<td>132</td>
<td>121</td>
<td>100</td>
</tr>
<tr>
<td><strong>Hoegrass</strong></td>
<td>1.5 L</td>
<td>Z13</td>
<td>111</td>
<td>109</td>
<td>145</td>
<td>166</td>
<td>146</td>
<td>143</td>
<td>141</td>
<td>115</td>
<td>98</td>
</tr>
<tr>
<td><strong>Grasp</strong></td>
<td>1.5 L</td>
<td>Z14</td>
<td>91</td>
<td>105</td>
<td>118</td>
<td>129</td>
<td>125</td>
<td>123</td>
<td>120</td>
<td>106</td>
<td>53*</td>
</tr>
<tr>
<td><strong>Hoegrass + Grasp</strong></td>
<td>1.0 L + 0.5 L</td>
<td>Z13</td>
<td>108</td>
<td>112</td>
<td>162</td>
<td>195</td>
<td>142</td>
<td>150</td>
<td>147</td>
<td>123</td>
<td>71*</td>
</tr>
<tr>
<td><strong>Hoegrass + Grasp</strong></td>
<td>0.5 L + 1.0 L</td>
<td>Z13</td>
<td>84</td>
<td>123</td>
<td>155</td>
<td>168</td>
<td>152</td>
<td>140</td>
<td>137</td>
<td>38*</td>
<td>6*</td>
</tr>
<tr>
<td><strong>Diuron + Tigrex</strong></td>
<td>300 mL + 250 mL</td>
<td>Z13</td>
<td>92</td>
<td>118</td>
<td>112</td>
<td>112</td>
<td>112</td>
<td>113</td>
<td>105</td>
<td>111</td>
<td>101</td>
</tr>
<tr>
<td><strong>Ally</strong></td>
<td>5 g</td>
<td>Z41</td>
<td>82</td>
<td>100</td>
<td>98</td>
<td>105</td>
<td>109</td>
<td>118</td>
<td>133</td>
<td>116</td>
<td>101</td>
</tr>
<tr>
<td><strong>MCPA LV ester</strong></td>
<td>1.0 L</td>
<td>Z13</td>
<td>100</td>
<td>105</td>
<td>117</td>
<td>126</td>
<td>119</td>
<td>120</td>
<td>126</td>
<td>97</td>
<td>92</td>
</tr>
<tr>
<td><strong>Igran + Lontrel</strong></td>
<td>800 mL + 200 mL</td>
<td>Z13</td>
<td>107</td>
<td>105</td>
<td>121</td>
<td>120</td>
<td>94</td>
<td>102</td>
<td>112</td>
<td>103</td>
<td>108</td>
</tr>
<tr>
<td><strong>Igran + Logran</strong></td>
<td>800 mL + 20 g</td>
<td>Z13</td>
<td>108</td>
<td>112</td>
<td>110</td>
<td>131</td>
<td>119</td>
<td>117</td>
<td>130</td>
<td>117</td>
<td>105</td>
</tr>
<tr>
<td><strong>2,4-D ester</strong></td>
<td>500 mL</td>
<td>Z41</td>
<td>75*</td>
<td>96</td>
<td>87</td>
<td>112</td>
<td>114</td>
<td>112</td>
<td>113</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td><strong>Ally + 2,4-D ester</strong></td>
<td>5 g + 400 mL</td>
<td>Z31</td>
<td>75*</td>
<td>96</td>
<td>92</td>
<td>103</td>
<td>115</td>
<td>107</td>
<td>97</td>
<td>91</td>
<td>84*</td>
</tr>
</tbody>
</table>
TRIAL TITLE: TOLERANCE OF CEREAL VARIETIES TO METRIBUZIN AND ETHIOZIN.

TRIAL NUMBER: 90EC37

OFFICERS: D. Bowran, N. Thomson. LOCATION: East Chapman Res. annex
CO-OPERATOR: SEEDING RATE: 50kg/ha
CROP(S):Wheat, barley, oats various. DATE SOWN: 13/6/90
SOIL TYPE:Eradu yellow sand. FERTILIZER: Agras No1 100kgs/ha
GROUND PREPARATION: Glyphosate 3 weeks prior to seeding @ 1.0L/ha
Glyphosate 2 days prior to seeding @ 1.0L/ha
EXPERIMENTAL DESIGN: Strip Plot.
PLOT SIZE: 3.0m x 10.0m
HARVESTING SIZE: 1.6m x 9.0m
SEEDING RATE: 50kg/ha

SPRAYING DETAILS:

SPRAYING DATE: 12/6/90
CROP STAGE: IBS
NOZZLE TYPE: 110015LP
VOLUME (L/Ha): 85
PRESSURE (KPa):

TEMPERATURES (°C)

(a) wet/dry 13°C/15°C
(b) previous 24hrs (min/max) 10°C/18°C
(c) next 24hrs (min/max) 10°C/18°C

RAINFALL (mm):

(a) previous 24hrs 0.2
(b) next 24hrs 0.0

TOTALS:

MAY 32.2  JUNE 50.4  JULY 56.4  AUG 43.0  SEPT 16.6  OCT 32.2

WEEDS: Minor: Brome grass

COMMENTS:

Blade wheat showed the highest tolerance to metribuzin and Tycor, while Spear wheat showed the least tolerance. Tolerance of most varieties to metribuzin was acceptable up to 150g/ha (200g Lexone). The addition of lignin to Lexone failed to increase wheat safety to metribuzin. Wheat was more tolerant to Tycor at the double rate (2.0kg) than metribuzin at the double rate (400g). All cultivars showed adequate tolerance to Stomp Plus and Stomp, though Spear and Mortlock were lower yielding.
<table>
<thead>
<tr>
<th>Timing</th>
<th>Blade</th>
<th>Gutha</th>
<th>Eradu</th>
<th>Reeves</th>
<th>Spear</th>
<th>Stirling</th>
<th>Yagan</th>
<th>Mortlock</th>
<th>Winjardie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>1.32</td>
<td>1.34</td>
<td>1.19</td>
<td>1.45</td>
<td>1.46</td>
<td>1.30</td>
<td>1.70</td>
<td>1.05</td>
<td>1.29</td>
</tr>
<tr>
<td>Lexone 133 g</td>
<td>IBS</td>
<td>93</td>
<td>104</td>
<td>100</td>
<td>91</td>
<td>96</td>
<td>102</td>
<td>101</td>
<td>89</td>
</tr>
<tr>
<td>Lexone 200 g</td>
<td>IBS</td>
<td>97</td>
<td>100</td>
<td>103</td>
<td>97</td>
<td>66*</td>
<td>88</td>
<td>97</td>
<td>88</td>
</tr>
<tr>
<td>Lexone 400 g</td>
<td>IBS</td>
<td>83</td>
<td>70*</td>
<td>67*</td>
<td>78*</td>
<td>12*</td>
<td>80*</td>
<td>74*</td>
<td>65*</td>
</tr>
<tr>
<td>Lexone + Lignin</td>
<td>133 g + 1 kg</td>
<td>IBS</td>
<td>96</td>
<td>95</td>
<td>104</td>
<td>92</td>
<td>99</td>
<td>99</td>
<td>100</td>
</tr>
<tr>
<td>Lexone + Lignin</td>
<td>200 g + 1 kg</td>
<td>IBS</td>
<td>107</td>
<td>96</td>
<td>101</td>
<td>105</td>
<td>73*</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>Lexone + Lignin</td>
<td>400 g + 1 kg</td>
<td>IBS</td>
<td>83</td>
<td>66*</td>
<td>59*</td>
<td>53*</td>
<td>17*</td>
<td>70*</td>
<td>67*</td>
</tr>
<tr>
<td>Tycor 1.0 kg</td>
<td>IBS</td>
<td>100</td>
<td>98</td>
<td>101</td>
<td>89</td>
<td>61*</td>
<td>87</td>
<td>104</td>
<td>85</td>
</tr>
<tr>
<td>Tycor 1.6 kg</td>
<td>IBS</td>
<td>93</td>
<td>100</td>
<td>94</td>
<td>95</td>
<td>25*</td>
<td>88</td>
<td>90</td>
<td>61*</td>
</tr>
<tr>
<td>Tycor 2.0 kg</td>
<td>IBS</td>
<td>105</td>
<td>99</td>
<td>93</td>
<td>98</td>
<td>0*</td>
<td>88</td>
<td>94</td>
<td>69*</td>
</tr>
<tr>
<td>Stomp Plus 1.0 L</td>
<td>IBS</td>
<td>98</td>
<td>100</td>
<td>97</td>
<td>104</td>
<td>89</td>
<td>96</td>
<td>97</td>
<td>86</td>
</tr>
<tr>
<td>Stomp 1.8 L</td>
<td>IBS</td>
<td>99</td>
<td>105</td>
<td>104</td>
<td>100</td>
<td>106</td>
<td>105</td>
<td>107</td>
<td>104</td>
</tr>
</tbody>
</table>
TRIAL TITLE: LUPIN TOLERANCE TO HERBICIDES

TRIAL NUMBER: 90EC34

OFFICERS: D. Bowran, N. Thomson

LOCATION: East Chapman Res. annex

CO-OPERATOR: 

SEEDING RATE: 50kg/ha

CROP(S): Lupins (various)

DATE SOWN: 15/6/90

SOIL TYPE: Eradu yellow sand.

FERTILIZER: 100kg superphosphate

GROUND PREPARATION: Sprayed 2.0L Glyphosate 3 days prior to seeding

Also cultitrashed 1 day prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot.

PLOT SIZE: 3.0m x 10.0m

HARVESTING SIZE: 1.5m x 9.0m

SPRAYING DETAILS:

SPRAYING DATE: 14/6/90 7/8/90

CROP STAGE: IBS/IAS 213

NOZZLE TYPE: 110015LP 110015LP

VOLUME (L/Ha): 64 67

PRESSURE (KPa): 150 160

TEMPERATURES (°C)

(a) wet/dry 13°C/14°C 13°C/15°C
(b) previous 24hrs 13°C/18°C 6°C/14°C
(min/max) (c) next 24hrs 10°C/16°C 8°C/15°C
(min/max)

RAINFALL (mm):

(a) previous 24hrs 11.4 0.2
(b) next 24hrs 1.8 0.0

TOTALS:

MAY 32.0  JUNE 50.4  JULY 56.4  AUG 43.0  SEPT 16.6  OCT 32.2

WEEDS: nil

COMMENTS:

Gungurru and 330 showed high tolerance to simazine and atrazine, while Danja, Yorrel and 430 were all reduced in yield even at low rates. Simazine top-up was well tolerated by all varieties. Yorrel was sensitive to all Brodal treatments, as was the Brodal sensitive line 435. In the case of Yorrel an increase in root rots was observed in all plots receiving Brodal. The simazine tolerant line 330 was more tolerant to Brodal in the presence of simazine than was Gungurru, which suggests the possibility of an interaction between simazine and Brodal. This is further supported by the treatment containing Assure + Brodal which received no simazine pretreatment as this was higher yielding than Assure + Brodal with simazine. Gungurru, 435 and 330 were the most tolerant to Lexone, while Danja and 430 were the most sensitive.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Timing</th>
<th>Gungurru</th>
<th>Danja</th>
<th>Yorrel</th>
<th>430</th>
<th>435</th>
<th>330</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Yield t/ha</td>
<td>0.708</td>
<td>0.600</td>
<td>0.456</td>
<td>0.550</td>
<td>0.655</td>
<td>0.544</td>
</tr>
<tr>
<td>Simazine 1.0 L</td>
<td>IBS</td>
<td>98</td>
<td>90</td>
<td>87</td>
<td>86</td>
<td>96</td>
<td>105</td>
</tr>
<tr>
<td>Simazine 1.5 L</td>
<td>IBS</td>
<td>99</td>
<td>89</td>
<td>81*</td>
<td>88</td>
<td>99</td>
<td>104</td>
</tr>
<tr>
<td>Simazine 2.0 L</td>
<td>IBS</td>
<td>93</td>
<td>90</td>
<td>79*</td>
<td>71*</td>
<td>90</td>
<td>95</td>
</tr>
<tr>
<td>Simazine 3.0 L</td>
<td>IBS</td>
<td>98</td>
<td>85*</td>
<td>73*</td>
<td>88</td>
<td>89</td>
<td>107</td>
</tr>
<tr>
<td>Simazine 4.0 L</td>
<td>IBS</td>
<td>98</td>
<td>87</td>
<td>71*</td>
<td>86</td>
<td>86</td>
<td>103</td>
</tr>
<tr>
<td>Simazine 8.0 L</td>
<td>IBS</td>
<td>86*</td>
<td>62*</td>
<td>48*</td>
<td>71*</td>
<td>74*</td>
<td>90</td>
</tr>
<tr>
<td>Atrazine 2.0 L</td>
<td>IBS</td>
<td>97</td>
<td>90</td>
<td>80*</td>
<td>87</td>
<td>93</td>
<td>98</td>
</tr>
<tr>
<td>Atrazine 2.0 L 3 leaf</td>
<td></td>
<td>83*</td>
<td>65*</td>
<td>52*</td>
<td>46*</td>
<td>72*</td>
<td>86</td>
</tr>
<tr>
<td>Simazine + Topup 2.0 L + 1.0 L</td>
<td>IBS + 3 leaf</td>
<td>93</td>
<td>102</td>
<td>94</td>
<td>94</td>
<td>103</td>
<td>103</td>
</tr>
<tr>
<td>Simazine + Diuron 1.5 L + 1.5 L</td>
<td>IAS</td>
<td>89</td>
<td>83*</td>
<td>88</td>
<td>72*</td>
<td>97</td>
<td>108</td>
</tr>
<tr>
<td>Simazine + Brodal 2.0 L</td>
<td>IBS</td>
<td>96</td>
<td>86*</td>
<td>77*</td>
<td>75*</td>
<td>97</td>
<td>101</td>
</tr>
<tr>
<td>aLexone 300 g 3 leaf</td>
<td></td>
<td>77*</td>
<td>57*</td>
<td>73*</td>
<td>66*</td>
<td>83*</td>
<td>89</td>
</tr>
<tr>
<td>aBrodal 150 mL 3 leaf</td>
<td></td>
<td>90</td>
<td>87*</td>
<td>74*</td>
<td>85</td>
<td>83*</td>
<td>110</td>
</tr>
<tr>
<td>aBrodal 300 mL 3 leaf</td>
<td></td>
<td>82*</td>
<td>70*</td>
<td>76*</td>
<td>73*</td>
<td>72*</td>
<td>103</td>
</tr>
<tr>
<td>aSimazine + Brodal 1.0 L + 100 mL</td>
<td>3 leaf</td>
<td>91</td>
<td>91</td>
<td>77*</td>
<td>85</td>
<td>82*</td>
<td>102</td>
</tr>
<tr>
<td>aVerdict + Brodal 750 mL + 150 mL</td>
<td>3 leaf</td>
<td>88*</td>
<td>81*</td>
<td>76*</td>
<td>73*</td>
<td>75*</td>
<td>95</td>
</tr>
<tr>
<td>aAssure + Brodal 750 mL + 150 mL</td>
<td>3 leaf</td>
<td>87*</td>
<td>77*</td>
<td>76*</td>
<td>81*</td>
<td>67*</td>
<td>107</td>
</tr>
<tr>
<td>aBrodal + Oil 100 mL 3 leaf</td>
<td></td>
<td>94</td>
<td>78*</td>
<td>73*</td>
<td>86</td>
<td>79*</td>
<td>101</td>
</tr>
<tr>
<td>Assure + Brodal 750 mL + 200 mL</td>
<td>3 leaf</td>
<td>98</td>
<td>97</td>
<td>89</td>
<td>94</td>
<td>90</td>
<td>92</td>
</tr>
</tbody>
</table>

a Simazine @ 2.0 L/ha IBS.
TRIAL TITLE: LUPIN TOLERANCE TO HERBICIDES.

TRIAL NUMBER: 90EB44

OFFICERS: D. Bowran, N. Thomson.
LOCATION: East Beverly Res. annex
CO-OPERATOR: SEEDING RATE: 50kg/ha
CROP(S): Lupins (various)
DATE SOWN: 6/6/89
SOIL TYPE: Sandy Loam
FERTILIZER: 100kg/ha Superphosphate
GROUND PREPARATION: 1.0L of Glyphosate 2 weeks prior and 1.0L of Glyphosate 4 days prior to seeding.

EXPERIMENTAL DESIGN: Strip Plot.
PLOT SIZE: 3.0m x 10.0m
HARVESTING SIZE: 1.6m x 9.0m

SPRAYING DETAILS:

SPRAYING DATE: 1/6/90 4/7/90
CROP STAGE: IBS 3 leaf
NOZZLE TYPE: 80010LP 110015LP
VOLUME (L/Ha): 45 65
PRESSURE (KPa): 160 180

TEMPERATURES (°C)

(a) wet/dry 13°C/20°C 11°C/15°C
(b) previous 24hrs 3°C/17°C 1°C/17°C
(min/max) 2°C/20°C 3°C/16°C
(c) next 24hrs 2°C/20°C 3°C/16°C
(min/max)

RAINFALL (mm):

(a) previous 24hrs 0.0 0.0
(b) next 24hrs 0.0 0.0

TOTALS: (mm)

MAY 65.9  JUNE 36.7  JULY 67.0  AUG 32.7  SEPT 18.6  OCT 27.0

WEEDS: Minor: Crassula, Toad rush

COMMENTS:

While this site was largely weed free, sufficient water weeds were present to produce a yield response. Gungurru was tolerant of all treatments except post-emergence atrazine. Danja and Yorrel appear to be less tolerant to Simazine and Brodal treatments when compared to Gungurru while 430 was intermediate in response. The response of Danja to Lexone was marked with almost total plant death, whereas Gungurru showed only minor leaf burning, while the other varieties showed some leaf loss but no plant death.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Timing</th>
<th>Danja</th>
<th>Gungurru</th>
<th>Yorrel</th>
<th>430</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td></td>
<td>0.751</td>
<td>0.785</td>
<td>0.991</td>
<td>0.913</td>
</tr>
<tr>
<td>Simazine 1.0 L IBS</td>
<td></td>
<td>121</td>
<td>127</td>
<td>123</td>
<td>131</td>
</tr>
<tr>
<td>Simazine 1.5 L IBS</td>
<td></td>
<td>114</td>
<td>141</td>
<td>122</td>
<td>116</td>
</tr>
<tr>
<td>Simazine 2.0 L IBS</td>
<td></td>
<td>105</td>
<td>110</td>
<td>106</td>
<td>110</td>
</tr>
<tr>
<td>Simazine 3.0 L IBS</td>
<td></td>
<td>98</td>
<td>108</td>
<td>106</td>
<td>101</td>
</tr>
<tr>
<td>Simazine 4.0 L IBS</td>
<td></td>
<td>99</td>
<td>109</td>
<td>98</td>
<td>103</td>
</tr>
<tr>
<td>Simazine 8.0 L IBS</td>
<td></td>
<td>62*</td>
<td>112</td>
<td>79</td>
<td>89</td>
</tr>
<tr>
<td>Atrazine 2.0 L IBS</td>
<td></td>
<td>95</td>
<td>116</td>
<td>103</td>
<td>93</td>
</tr>
<tr>
<td>Atrazine 2.0 L 8 leaf</td>
<td></td>
<td>34*</td>
<td>42*</td>
<td>17*</td>
<td>28*</td>
</tr>
<tr>
<td>Simazine Topup 2.0 L + 1.0 L IBS + 3 leaf 10</td>
<td></td>
<td>121</td>
<td>129</td>
<td>97</td>
<td>106</td>
</tr>
<tr>
<td>Simazine + Diuron 1.5 L + 1.5 L IAS</td>
<td></td>
<td>106</td>
<td>117</td>
<td>96</td>
<td>90</td>
</tr>
<tr>
<td>Simazine + Devrinol 2.0 L + 1.0 kg IBS</td>
<td></td>
<td>113</td>
<td>121</td>
<td>96</td>
<td>107</td>
</tr>
<tr>
<td>Lexone 300 g 3 leaf</td>
<td></td>
<td>29*</td>
<td>102</td>
<td>80</td>
<td>88</td>
</tr>
<tr>
<td>Brodal 150 mL 3 leaf</td>
<td></td>
<td>89</td>
<td>118</td>
<td>99</td>
<td>101</td>
</tr>
<tr>
<td>Brodal 300 mL 3 leaf</td>
<td></td>
<td>92</td>
<td>117</td>
<td>96</td>
<td>99</td>
</tr>
<tr>
<td>Simazine + Brodal 1.0 L + 100 mL 3 leaf</td>
<td></td>
<td>99</td>
<td>124</td>
<td>104</td>
<td>107</td>
</tr>
<tr>
<td>Verdict + Brodal 750 mL + 150 mL 3 leaf</td>
<td></td>
<td>112</td>
<td>116</td>
<td>103</td>
<td>101</td>
</tr>
<tr>
<td>Sertin + Brodal 500 mL + 150 mL 3 leaf</td>
<td></td>
<td>81</td>
<td>127</td>
<td>95</td>
<td>106</td>
</tr>
<tr>
<td>Pantera + Oil 1.0 L 3 leaf</td>
<td></td>
<td>113</td>
<td>112</td>
<td>88</td>
<td>112</td>
</tr>
<tr>
<td>Pantera + Oil 2.0 L 3 leaf</td>
<td></td>
<td>103</td>
<td>122</td>
<td>104</td>
<td>118</td>
</tr>
</tbody>
</table>
TRIAL TITLE: PEA AND OTHER GRAIN LEGUME TOLERANCE TO HERBICIDES.

TRIAL NUMBER: 90KA131


CO-OPERATOR: SEEDING RATE: 50kg/ha

CROP(S): Peas DATE SOWN: 28/6/90

SOIL TYPE: Sandy gravel over rock. FERTILIZER: 100kg/ha superphosphate

GROUND PREPARATION:

EXPERIMENTAL DESIGN: Strip Plot

PLOT SIZE: 3.0m x 10.0m

HARVESTING SIZE: 1.42m x 9.0m

SPRAYING DETAILS:

SPRAYING DATE: 27/6/90 28/6/90 14/8/90

CROP STAGE: IBS IAS 4-5leaf

NOZZLE TYPE: 110015LP 110015LP 8001LP

VOLUME (L/Ha): 64 64 48

PRESSURE (KPa): 160 160 200

TEMPERATURES (°C)

(a) wet/dry 10°C/14°C 11°C/15°C 10°C/13°C

(b) previous 24hrs (min/max) - - -

(c) next 24hrs (min/max) - - -

RAINFALL (mm):

(a) previous 24hrs 0.0 0.0 0.5

(b) next 24hrs 0.0 0.0 0.0

TOTALS:

MAY-30.0 JUNE-28.0 JULY-92.0 AUG-36.0 SEPT-39.0 OCT-27.5

WEEDS: Minor: Brome grass

COMMENTS:

While yield results indicate that Wirrega and Dundale showed few significant yield reductions, diuron on Dundale and MCPA on both varieties did cause severe crop effects up to 6 weeks after application. Pursuit at the 3 leaf stage caused a complete yellowing of the crop for 2-3 weeks after application. Diuron + Pursuit was the safest overall treatment on the field peas. The SSF fresh pod weight is a more reliable indicator of tolerance as substantial pod shattering occurred before harvest. Only Pursuit at the 3 leaf timing gave a large yield decrease, although the double rate of diuron + Treflan and diuron + Pursuit also decreased yield.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Timing</th>
<th>Wirrega</th>
<th>Dundale</th>
<th>SSF dry</th>
<th>SSF fresh pod (Nov. 1 1990)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Yield t/ha</td>
<td>0.84</td>
<td>0.75</td>
<td>0.03</td>
<td>4.50</td>
</tr>
<tr>
<td>Bladex 2.0 L</td>
<td>IBS</td>
<td>88</td>
<td>108</td>
<td>148</td>
<td>119</td>
</tr>
<tr>
<td>Bladex 4.0 L</td>
<td>IBS</td>
<td>89</td>
<td>102</td>
<td>158</td>
<td>101</td>
</tr>
<tr>
<td>Diuron + Treflan 2.0 L</td>
<td>IBS</td>
<td>107</td>
<td>80</td>
<td>162</td>
<td>145</td>
</tr>
<tr>
<td>Diuron + Treflan 4.0 L</td>
<td>IAS 89</td>
<td>110</td>
<td>120</td>
<td>145</td>
<td>140</td>
</tr>
<tr>
<td>Pursuit 200 mL</td>
<td>IAS 105</td>
<td>120</td>
<td>145</td>
<td>85</td>
<td>88</td>
</tr>
<tr>
<td>Pursuit 300 mL</td>
<td>IAS 94</td>
<td>97</td>
<td>113</td>
<td>102</td>
<td>102</td>
</tr>
<tr>
<td>Pursuit 600 mL</td>
<td>IAS 99</td>
<td>104</td>
<td>145</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>Diuron + Pursuit 1.0 L + 200 mL</td>
<td>IAS 115</td>
<td>119</td>
<td>137</td>
<td>88</td>
<td>88</td>
</tr>
<tr>
<td>Pursuit (split) 100 mL + 100 mL</td>
<td>IAS 116</td>
<td>103</td>
<td>118</td>
<td>134</td>
<td>134</td>
</tr>
<tr>
<td>Lexone 200 g</td>
<td>IAS 101</td>
<td>89</td>
<td>125</td>
<td>112</td>
<td>112</td>
</tr>
<tr>
<td>Lexone + Pursuit 200 g + 200 mL</td>
<td>IAS 96</td>
<td>102</td>
<td>134</td>
<td>104</td>
<td>104</td>
</tr>
<tr>
<td>Pursuit + Stomp 200 mL + 1.0 L</td>
<td>IAS 89</td>
<td>94</td>
<td>139</td>
<td>111</td>
<td>111</td>
</tr>
<tr>
<td>aBrodal 150 mL</td>
<td>3 leaf 121</td>
<td>105</td>
<td>171</td>
<td>117</td>
<td>117</td>
</tr>
<tr>
<td>aVerdict + Brodal 750 mL + 150 mL</td>
<td>3 leaf 96</td>
<td>110</td>
<td>164</td>
<td>122</td>
<td>122</td>
</tr>
<tr>
<td>aBladex + Brodal 1.0 L + 150 mL</td>
<td>3 leaf 117</td>
<td>98</td>
<td>170</td>
<td>133</td>
<td>133</td>
</tr>
<tr>
<td>aPursuit 200 mL</td>
<td>3 leaf 92</td>
<td>114</td>
<td>143</td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>aMCPA amine 0.7 L</td>
<td>3 leaf 80</td>
<td>88</td>
<td>133</td>
<td>95</td>
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<tr>
<td>aPantera + Oil 1.0 L</td>
<td>3 leaf 102</td>
<td>98</td>
<td>152</td>
<td>139</td>
<td>139</td>
</tr>
<tr>
<td>aPantera + Oil 2.0 L</td>
<td>3 leaf 96</td>
<td>106</td>
<td>149</td>
<td>159</td>
<td>159</td>
</tr>
</tbody>
</table>

* Bladex @ 2.0 L/ha IBS.
TRIAL TITLE: Pea tolerance to herbicides-soil residue analysis in following year

TRIAL NOS: 89KA64

COMMENTS:

This trial site was seeded to oats in 1990 and the effect of any herbicide residues from 1989 evaluated. Significant reductions in dry weight of oats were found with all Pursuit treatments at the first harvest, but by the second harvest the low rate of Pursuit applied after seeding had not decreased herbage yield. In contrast Pursuit applied at the 3 leaf stage or at 500ml/ha or greater after seeding was still reducing yield. Grain yield was reduced significantly only by 1.0 L applied after seeding, though 500 ml/ha applied after seeding was still low.

This trial shows that while early carryover effects are possible when the recommended rate is used (250 ml/ha) these are not likely to carry through to yield.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Timing</th>
<th>DW1</th>
<th>DW2</th>
<th>Grain weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Yield t/ha</td>
<td>4.54</td>
<td>3.92</td>
<td>1.41</td>
</tr>
<tr>
<td>Bladex 2.0 L IBS</td>
<td></td>
<td>114</td>
<td>124</td>
<td>97</td>
</tr>
<tr>
<td>Bladex 4.0 L IBS</td>
<td></td>
<td>100</td>
<td>120</td>
<td>101</td>
</tr>
<tr>
<td>Diuron + Triflu 2.0 L + 1.0 L IBS</td>
<td>96</td>
<td>96</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>Pursuit 250 mL IAS</td>
<td></td>
<td>81</td>
<td>98</td>
<td>116</td>
</tr>
<tr>
<td>Pursuit 500 mL IAS</td>
<td></td>
<td>68*</td>
<td>89</td>
<td>85</td>
</tr>
<tr>
<td>Pursuit 1.0 L IAS</td>
<td></td>
<td>28*</td>
<td>55*</td>
<td>52*</td>
</tr>
<tr>
<td>Pursuit + wa 500 mL</td>
<td>3 leaf</td>
<td>78*</td>
<td>71</td>
<td>103</td>
</tr>
<tr>
<td>Pursuit + wa + Boost 500 mL</td>
<td>3 leaf</td>
<td>63*</td>
<td>71</td>
<td>108</td>
</tr>
<tr>
<td>Bladex + Pursuit 500 mL + 250 mL</td>
<td>3 leaf</td>
<td>61*</td>
<td>74</td>
<td>107</td>
</tr>
<tr>
<td>Bladex + MCPA 500 mL + 300 mL</td>
<td>3 leaf</td>
<td>82</td>
<td>120</td>
<td>107</td>
</tr>
<tr>
<td>Bladex + Brodal 500 mL + 50 mL</td>
<td>3 leaf</td>
<td>92</td>
<td>115</td>
<td>108</td>
</tr>
<tr>
<td>Bladex + Sertin + Oil 50 mL + 1.0 L + 1%</td>
<td>3 leaf</td>
<td>92</td>
<td>110</td>
<td>92</td>
</tr>
<tr>
<td>Pursuit + Diuron 250 mL + 1.0 L IAS</td>
<td>77*</td>
<td>97</td>
<td>106</td>
<td></td>
</tr>
</tbody>
</table>

**DW**  Dry weight of herbage cuts September 6, 1990.

**DW2**  Dry weight of herbage cuts November 1, 1990.
TRIAL TITLE: PASTURE LEGUME TOLERANCE TO HERBICIDES.

TRIAL NUMBER: 90KA132


SEEDING RATE: 25kg/ha

CROP(S): Pasture Legumes DATE SOWN: 27th June 1990

SOIL TYPE: Sandy Gravel over rock FERTILIZER: 100kg super/ha

GROUND PREPARATION: Sprayed Glyphosate @ 1.0L/ha before seeding. Cultivated preseeding

EXPERIMENTAL DESIGN: Strip Plot.

PLOT SIZE: 3.0m x 3.0m

HARVESTING SIZE: 1m²

SPRAYING DETAILS:

SPRAYING DATE: 31/8/90

CROP STAGE: 4-10 leaf depending on variety

NOZZLE TYPE: 110015LP

VOLUME (L/Ha): 63

PRESSURE (KPa): 160

TEMPERATURES (°C)

(a) wet/dry 11.5°C/16.0°C

(b) previous 24hrs

(min/max) –

(c) next 24hrs

(min/max) –

RAINFALL (mm):

(a) previous 24hrs 0.0

(b) next 24hrs 0.0

TOTALS:

MAY-30.0 JUNE-28.0 JULY-92.0 AUG-36.0 SEPT-39.0 OCT-27.5

WEEDS: Grass species sprayed with Assure 0.75L/ha postemergent. Some capeweed also present.

COMMENTS:

While ratings were taken on all varieties, grain yield were obtained only on the medics. The late planting and dry conditions in June and early July resulted in late emergence and poor seed set in the sub-clover. While Trifolamine (2,4-DB) and Pursuit were least damaging herbicides at the first rating, Trifolamine became more damaging with time on the sub-clover. This was most noticeable with Dalkeith which appears to be more sensitive to 2,4-DB. Santiago medic also shows a slower recovery to herbicides than did Circle Valley while Parabinga had the best recovery. All diflufenican based herbicides (Brodal, Tigrax, Exp 30088A), caused yellowing or leaf burning, but recovery was generally good. All the medics were slightly more sensitive to bromoxynil products (EXP30088A), Brominil than sub-clover. Simazine was generally safe though some plant death was observed in Santiago. Seed yields on the medics were variable due to the interaction with capeweed control, but it would appear that Santiago is the least tolerant variety of those tested to most herbicides, that Circle Valley shows good tolerance (except to perhaps Exp30088A), that Parabinga is tolerant to most herbicides, while Zodiac has reasonable tolerance to the lower rates of 2,4-DB alone, Brodal and Brominil.
<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield t/ha</th>
<th>Zodiac</th>
<th>Circle Valley</th>
<th>Parabinga</th>
<th>Santiago</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td></td>
<td>0.16</td>
<td>0.56</td>
<td>0.56</td>
<td>0.95</td>
</tr>
<tr>
<td>Trifolamine 1.5 L</td>
<td>3-5 leaf</td>
<td>135</td>
<td>95</td>
<td>94</td>
<td>79</td>
</tr>
<tr>
<td>Trifolamine 3.0 L</td>
<td>3-5 leaf</td>
<td>167</td>
<td>131</td>
<td>140</td>
<td>67</td>
</tr>
<tr>
<td>Trifolamine 4.5 L</td>
<td>3-5 leaf</td>
<td>57</td>
<td>111</td>
<td>110</td>
<td>66</td>
</tr>
<tr>
<td>Brodal 200 mL</td>
<td>3-5 leaf</td>
<td>167</td>
<td>135</td>
<td>165</td>
<td>96</td>
</tr>
<tr>
<td>Brodal 400 mL</td>
<td>3-5 leaf</td>
<td>126</td>
<td>123</td>
<td>122</td>
<td>81</td>
</tr>
<tr>
<td>Tigrex 250 mL</td>
<td>3-5 leaf</td>
<td>84</td>
<td>105</td>
<td>87</td>
<td>63</td>
</tr>
<tr>
<td>Tigrex 500 mL</td>
<td>3-5 leaf</td>
<td>68</td>
<td>108</td>
<td>92</td>
<td>63</td>
</tr>
<tr>
<td>Exp 30088A 500 mL</td>
<td>3-5 leaf</td>
<td>31</td>
<td>72</td>
<td>88</td>
<td>61*</td>
</tr>
<tr>
<td>Exp 30088A 1.0 L</td>
<td>3-5 leaf</td>
<td>92</td>
<td>64</td>
<td>92</td>
<td>34*</td>
</tr>
<tr>
<td>Diuron + Pursuit 300 mL</td>
<td>3-5 leaf</td>
<td>78</td>
<td>117</td>
<td>88</td>
<td>49*</td>
</tr>
<tr>
<td>Simazine 1.5 L</td>
<td>3-5 leaf</td>
<td>91</td>
<td>102</td>
<td>96</td>
<td>77</td>
</tr>
<tr>
<td>Pursuit 100 mL</td>
<td>3-5 leaf</td>
<td>54</td>
<td>123</td>
<td>117</td>
<td>73</td>
</tr>
<tr>
<td>Pursuit 150 mL</td>
<td>3-5 leaf</td>
<td>73</td>
<td>109</td>
<td>128</td>
<td>84</td>
</tr>
<tr>
<td>Pursuit 300 mL</td>
<td>3-5 leaf</td>
<td>97</td>
<td>113</td>
<td>157</td>
<td>118</td>
</tr>
<tr>
<td>Diuron + 2,4-D 200 mL</td>
<td>3-5 leaf</td>
<td>45</td>
<td>78*</td>
<td>44</td>
<td>50*</td>
</tr>
<tr>
<td>Diuron + 2,4-D 400 mL</td>
<td>3-5 leaf</td>
<td>82</td>
<td>110</td>
<td>109</td>
<td>72</td>
</tr>
<tr>
<td>Tribunal + 2,4-DB 400 g</td>
<td>3-5 leaf</td>
<td>89</td>
<td>111</td>
<td>93</td>
<td>98</td>
</tr>
<tr>
<td>Tribunal + 2,4-DB 800 g</td>
<td>3-5 leaf</td>
<td>149</td>
<td>87</td>
<td>98</td>
<td>42*</td>
</tr>
<tr>
<td>Brominil 1.5 L</td>
<td>3-5 leaf</td>
<td>106</td>
<td>84</td>
<td>100</td>
<td>41*</td>
</tr>
</tbody>
</table>
Pasture legumes ratings, 20th September 1990:

Trial No. 90KA132:

Ratings are on scale of 0-8 where 0 = no damage and 8 = total kill
Y denotes yellowing * denotes new leaves appear unaffected
B denotes burning
LC denotes leaf cupping.
PD denotes plant death
S denotes stunting (smaller plants but no obvious burning or yellowing)

<table>
<thead>
<tr>
<th></th>
<th>Dalkeith</th>
<th>Trikala</th>
<th>Seaton Park</th>
<th>Junee</th>
<th>Zodiac</th>
<th>Parabinga</th>
<th>Circle Valley</th>
<th>Santiago</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Triflamine 1.5L</td>
<td>0.9</td>
<td>0.2</td>
<td>0.2</td>
<td>1.2Y</td>
<td>0.6S</td>
<td>0.8S</td>
<td>1.0</td>
<td>0.4Y</td>
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<tr>
<td>Triflamine 3.0L</td>
<td>0.6</td>
<td>0.6</td>
<td>0.3</td>
<td>0.0</td>
<td>0.3</td>
<td>0.6</td>
<td>1.6Y</td>
<td>1.3S</td>
</tr>
<tr>
<td>Triflamine 4.5L</td>
<td>0.4</td>
<td>0.6</td>
<td>0.2</td>
<td>0.6</td>
<td>0.4</td>
<td>1.0</td>
<td>1.0S</td>
<td>2.3S</td>
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<tr>
<td>Brodal 200ml</td>
<td>1.7Y</td>
<td>2.2Y</td>
<td>2.2Y</td>
<td>1.2Y</td>
<td>0.2</td>
<td>1.9Y</td>
<td>0.9Y</td>
<td>0.9Y</td>
</tr>
<tr>
<td>Brodal 400ml</td>
<td>1.7Y</td>
<td>3.5Y</td>
<td>3.4Y</td>
<td>1.3Y</td>
<td>1.0Y</td>
<td>3.2Y</td>
<td>2.1Y</td>
<td>2.4Y</td>
</tr>
<tr>
<td>Tigrex 250ml</td>
<td>1.7Y</td>
<td>2.2Y</td>
<td>2.4Y</td>
<td>1.9Y</td>
<td>2.9Y</td>
<td>3.9Y</td>
<td>2.9Y</td>
<td>1.9Y</td>
</tr>
<tr>
<td>Tigrex 500ml</td>
<td>2.9Y</td>
<td>2.7Y</td>
<td>3.4Y</td>
<td>3.5Y</td>
<td>3.9Y</td>
<td>5.4Y</td>
<td>3.9Y</td>
<td>3.9Y</td>
</tr>
<tr>
<td>Exp30088A 500ml</td>
<td>3.7Y</td>
<td>3.5Y</td>
<td>4.9Y</td>
<td>4.2Y</td>
<td>4.4B</td>
<td>4.9B</td>
<td>5.1B</td>
<td>5.3B</td>
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<td>5.9B</td>
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</tr>
<tr>
<td>Diuron+Pursuit 300ml+100ml</td>
<td>3.4Y</td>
<td>2.7B</td>
<td>3.7B</td>
<td>3.2B</td>
<td>3.4B</td>
<td>4.2B</td>
<td>2.9B</td>
<td>3.2B</td>
</tr>
<tr>
<td>Simazine 1.5L</td>
<td>0.7Y</td>
<td>0.7Y</td>
<td>1.1B</td>
<td>0.8Y</td>
<td>0.9Y</td>
<td>1.7B</td>
<td>0.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Pursuit 100ml</td>
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<td>0.0</td>
<td>0.7Y</td>
<td>0.2</td>
<td>0.2</td>
<td>1.4</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Pursuit 150ml</td>
<td>0.0</td>
<td>0.4Y</td>
<td>0.7Y</td>
<td>0.2</td>
<td>0.4</td>
<td>1.2</td>
<td>1.2Y</td>
<td>0.0</td>
</tr>
<tr>
<td>Pursuit 300ml</td>
<td>0.5</td>
<td>0.7Y</td>
<td>0.7Y</td>
<td>0.7Y</td>
<td>0.3</td>
<td>1.0</td>
<td>1.1Y</td>
<td>0.7</td>
</tr>
<tr>
<td>Diuron+24D 200ml+400ml</td>
<td>2.4B</td>
<td>2.2B</td>
<td>2.9B</td>
<td>2.2B</td>
<td>1.9B</td>
<td>7.2B</td>
<td>3.4B</td>
<td>2.6B</td>
</tr>
<tr>
<td>Diuron+24D 400ml+800ml</td>
<td>2.4B</td>
<td>2.2B</td>
<td>2.9B</td>
<td>2.7B</td>
<td>1.4B</td>
<td>4.0B</td>
<td>1.6B</td>
<td>2.2B</td>
</tr>
<tr>
<td>Tribunal+24DB 400g+400ml</td>
<td>2.9B</td>
<td>2.5B</td>
<td>3.2B</td>
<td>3.0B</td>
<td>3.9B</td>
<td>4.4B</td>
<td>3.1B</td>
<td>4.4B</td>
</tr>
<tr>
<td>Tribunal+24DB 800g+800ml</td>
<td>3.4B</td>
<td>2.7B</td>
<td>2.9B</td>
<td>3.2B</td>
<td>4.9B</td>
<td>4.4B</td>
<td>4.6B</td>
<td>5.4B</td>
</tr>
<tr>
<td>Brominil 1.5L</td>
<td>2.6B</td>
<td>2.0B</td>
<td>1.9B</td>
<td>2.2B</td>
<td>5.4B</td>
<td>4.2B</td>
<td>4.6B</td>
<td>5.9B</td>
</tr>
<tr>
<td>LSD</td>
<td>1.1</td>
<td>1.0</td>
<td>1.1</td>
<td>1.1</td>
<td>1.3</td>
<td>1.7</td>
<td>1.5</td>
<td>1.8</td>
</tr>
</tbody>
</table>
Pasture legumes ratings, 12th October 1990:

Trial No.: 90KA132

Ratings are on scale of 0-8 where 0 = no damage and 8 = total kill  
Y denotes yellowing  
* denotes new leaves appear unaffected  
B denotes burning  
 LC denotes leaf cupping.  
PD denotes plant death  
S denotes stunting. (smaller plants but no obvious burning or yellowing)

<table>
<thead>
<tr>
<th>Control</th>
<th>Dalkeith</th>
<th>Trikkala</th>
<th>Seaton Park</th>
<th>Junee</th>
<th>Zodiac</th>
<th>Parabinga</th>
<th>Circle Valley</th>
<th>Santiago</th>
<th>Madiera</th>
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